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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FARJAMI & FARJAMI LLP
26522 LA ALAMEDA AVENUE, SUITE 360
MISSION VIEJO, CA 92691

EXAMINER

RAMPURIA, SHARAD K

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,559

Applicant(s)

CHEN ET AL.

Examiner

DANH C LE

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 18-30, 35-47, 52-63, 69-81 and 86-97 is/are rejected.
- 7) ☒ Claim(s) 14-17, 31-34, 48-51, 64-68, 82-85, 98-102 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1, 4-7, 12, 13, 18-20, 26-29, 35, 38-41, 46-47, 52-54, 60-61, 69, 72-75, 80-81, 86-88, 94-95 are rejected under 35 U.S.C. 102(b) as being anticipated by Forssen (US 5,615,409).**

As to claim 1, Forssen teaches a method of reception (figure 2(a), 2(b) and col. 4, lines 36-59), comprising:

forming a first beam to cover a region;
detecting a signal in the region using the first beam; and
forming a second beam to receive the detected signal.

As to claim 4, Forssen teaches the method of claim 1 wherein the formation of the first beam comprises forming a plurality of beams to cover the region (col.3, lines 30-52).

As to claim 5, Forssen teaches the method of claim 1 wherein the formation of the first beam comprises forming an omni-directional beam (col.4, lines 36-59).

As to claim 6, Forssen teaches the method of claim 1 further comprising detecting a second signal in the region using the first beam, and wherein the formation

of the second beam comprises forming the second beam to receive both the signal and the second signal (col.3, lines 30-52).

As to claim 7, Forssen teaches the method of claim 6 wherein the formation of the second beam further comprises forming a plurality of beams, one of the plurality of beams receiving the signal and a second one of the plurality of beams receiving the second signal (figure 2(a), (2b)).

As to claim 12, Forssen teaches the method of claim 1 wherein the formation of the first beam comprises receiving energy through a plurality of spatially separated elements, applying a weight to the received energy from each of the elements, and combining the weighted energy (col.5, line 60-col.5, line 13).

As to claim 13, Forssen teaches the method of claim 12 wherein the weight applied to the received energy from each of the elements is different.

As to claim 18, the claim is a system claim of claim 1; therefore, the claim is interpreted and rejected as set forth as in claim 1.

As to claim 19, the claim is a system claim of claim 5; therefore, the claim is interpreted and rejected as set forth as in claim 5.

As to claim 20, the claim is a system claim of claim 4; therefore, the claim is interpreted and rejected as set forth as in claim 4.

As to claim 26, Forssen teaches the receiver system of claim 18 wherein the antenna comprises a plurality of spatially separated elements (col.4, line 60-col.5, line 12).

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As to claim 27, Forssen teaches the receiver system of claim 26 wherein the elements comprises first and second groups, the first group configured to form the first beam and the second group configured to form the second beam (col.3, line 52-col.4, line 14).

As to claim 28, the claim is a system claim of claim 12; therefore, the claim is interpreted and rejected as set forth as in claim 12.

As to claim 29, the claim is a system claim of claim 13; therefore, the claim is interpreted and rejected as set forth as in claim 13.

As to claim 35, Forssen teaches the method of communication (figure 2(a), 2(b) and col. 4, lines 36-59), comprising:

transmitting a signal from a base station;

forming a first beam at a remote station to search for the transmitted signal within a region;

detecting the transmitted signal with the first beam in the region; and

forming a second beam at the remote station to receive the signal.

As to claim 38, the limitation of the claim is same limitation of claim 4; therefore, the claim is interpreted and rejected as set forth as in claim 4.

As to claim 39, the limitation of the claim is same limitation of claim 5; therefore, the claim is interpreted and rejected as set forth as in claim 5.

As to claim 40, the limitation of the claim is same limitation of claim 6; therefore, the claim is interpreted and rejected as set forth as in claim 6.

As to claim 41, the limitation of the claim is same limitation of claim 7; therefore, the claim is interpreted and rejected as set forth as in claim 7.

As to claim 46, the limitation of the claim is same limitation of claim 12; therefore, the claim is interpreted and rejected as set forth as in claim 12.

As to claim 47, the limitation of the claim is same limitation of claim 13; therefore, the claim is interpreted and rejected as set forth as in claim 13.

As to claim 52, Forssen teaches a remote station comprising a processor configured to control an antenna to search for a first signal with a first beam and to receive a second signal with a second beam (figure 2(a), 2(b) and col. 4, lines 36-59).

As to claim 53, the limitation of the claim is same limitation of claim 5; therefore, the claim is interpreted and rejected as set forth as in claim 5.

As to claim 54, the limitation of the claim is same limitation of claim 4; therefore, the claim is interpreted and rejected as set forth as in claim 4.

As to claim 60, the limitation of the claim is same limitation of claim 12; therefore, the claim is interpreted and rejected as set forth as in claim 12.

As to claim 61, the limitation of the claim is same limitation of claim 13; therefore, the claim is interpreted and rejected as set forth as in claim 13.

As to claim 69, the claim is a computer program of claim 1; therefore, the claim is interpreted and rejected as set forth as in claim 1.

As to claim 72, the claim is a computer program of claim 4; therefore, the claim is interpreted and rejected as set forth as in claim 4.

As to claim 73, the claim is a computer program of claim 5; therefore, the claim is interpreted and rejected as set forth as in claim 5.

As to claim 74, the claim is a computer program of claim 6; therefore, the claim is interpreted and rejected as set forth as in claim 6.

As to claim 75, the claim is a computer program of claim 7; therefore, the claim is interpreted and rejected as set forth as in claim 7.

As to claim 80, the claim is a computer program of claim 12; therefore, the claim is interpreted and rejected as set forth as in claim 12.

As to claim 81, the claim is a computer program of claim 13; therefore, the claim is interpreted and rejected as set forth as in claim 13.

As to claim 86, Forssen teaches a receiver system (figure 2(a), 2(b) and col. 4, lines 36-59), comprising:

means for forming a first beam through an antenna to search for a first signal,
and

means for forming a second beam through the antenna to receive a second signal.

As to claim 87, the limitation of the claim is same limitation of claim 5; therefore, the claim is interpreted and rejected as set forth as in claim 5.

As to claim 88, the limitation of the claim is same limitation of claim 4; therefore, the claim is interpreted and rejected as set forth as in claim 4.

As to claim 94, the limitation of the claim is same limitation of claim 12; therefore, the claim is interpreted and rejected as set forth as in claim 12.

As to claim 95, the limitation of the claim is same limitation of claim 13; therefore, the claim is interpreted and rejected as set forth as in claim 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-3, 8-11, 21-24, 36-37, 42-45, 55-58, 60, 70, 71, 76-79, 89-93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssen in view of Honcharenko (US 6,349,217).

As to claim 2, Forssen teaches a method of claim comprises pointing the first beam across the region. Forssen fails to teach sweeping the first beam across the region. Honcharenko teaches sweeping the first beam across the region (col.1, lines 27-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Honcharenko into the system of Forssen in order to have a coverage area in which the subscriber is located.

As to claim 3, the combine of Forssen and Honcharenko teaches the method of claim 1 wherein the coverage of the region comprises moving the first beam to a plurality of different locations within the region (col.1, lines 27-42).

As to claim 8, the combine of Forssen and Honcharenko teaches the method of claim 6 wherein the formation of the second beam further comprises forming a shape of

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the second beam to receive both the signal and the second signal (Honcharenko, col.2, lines 20-65).

As to claim 9, the combine of Forssen and Honcharenko teaches the method of claim 1 further comprising adjusting the second beam to track the detected signal (Honcharenko, col.2, lines 20-65).

As to claim 10, the combine of Forssen and Honcharenko teaches the method of claim 9 wherein the adjustment of the second beam comprises moving the second beam (Honcharenko, col.2, lines 20-65).

As to claim 11, the combine of Forssen and Honcharenko teaches the method of claim 9 wherein adjustment of the second beam comprises changing the shape of the second beam (Honcharenko, col.2, lines 20-65).

As to claim 21, the claim is a system claim of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 22, the claim is a system claim of claim 3; therefore, the claim is interpreted and rejected as set forth as in claim 3.

As to claim 23, the claim is a system claim of claim 9; therefore, the claim is interpreted and rejected as set forth as in claim 9.

As to claim 24, the claim is a system claim of claim 10; therefore, the claim is interpreted and rejected as set forth as in claim 10.

As to claim 36, the limitation of the claim is same limitation of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 37, the limitation of the claim is same limitation of claim 3; therefore, the claim is interpreted and rejected as set forth as in claim 3.

As to claim 42, the limitation of the claim is same limitation of claim 8; therefore, the claim is interpreted and rejected as set forth as in claim 8.

As to claim 43, the limitation of the claim is same limitation of claim 9; therefore, the claim is interpreted and rejected as set forth as in claim 9.

As to claim 44, the limitation of the claim is same limitation of claim 10; therefore, the claim is interpreted and rejected as set forth as in claim 10.

As to claim 45, the limitation of the claim is same limitation of claim 11; therefore, the claim is interpreted and rejected as set forth as in claim 11.

As to claim 55, the limitation of the claim is same limitation of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 56, the limitation of the claim is same limitation of claim 3; therefore, the claim is interpreted and rejected as set forth as in claim 3.

As to claim 57, the limitation of the claim is same limitation of claim 9; therefore, the claim is interpreted and rejected as set forth as in claim 9.

As to claim 58, the limitation of the claim is same limitation of claim 10; therefore, the claim is interpreted and rejected as set forth as in claim 10.

As to claim 60, the limitation of the claim is same limitation of claim 11; therefore, the claim is interpreted and rejected as set forth as in claim 11.

As to claim 70, the claim is a computer program of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 71, the claim is a computer program of claim 3; therefore, the claim is interpreted and rejected as set forth as in claim 3.

As to claim 70, the claim is a computer program of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 76, the claim is a computer program of claim 8; therefore, the claim is interpreted and rejected as set forth as in claim 8.

As to claim 77, the claim is a computer program of claim 9; therefore, the claim is interpreted and rejected as set forth as in claim 9.

As to claim 78, the claim is a computer program of claim 10; therefore, the claim is interpreted and rejected as set forth as in claim 10.

As to claim 79, the claim is a computer program of claim 11; therefore, the claim is interpreted and rejected as set forth as in claim 11.

As to claim 89, the limitation of the claim is same limitation of claim 2; therefore, the claim is interpreted and rejected as set forth as in claim 2.

As to claim 90, the limitation of the claim is same limitation of claim 3; therefore, the claim is interpreted and rejected as set forth as in claim 3.

As to claim 91, the limitation of the claim is same limitation of claim 9; therefore, the claim is interpreted and rejected as set forth as in claim 9.

As to claim 92, the limitation of the claim is same limitation of claim 10; therefore, the claim is interpreted and rejected as set forth as in claim 10.

As to claim 93, the limitation of the claim is same limitation of claim 11; therefore, the claim is interpreted and rejected as set forth as in claim 11.

3. Claims 30, 62-63, 96-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssen and Honcharenko in view of Honcharenko (US 6,249,251).

As to claim 30, the combine of Forssen and Honcharenko teaches the receiver system of claim 28, the combine of Forssen and Honcharenko fails to teach the processor further comprises a search configured to search for the first signal as a function of the combined weighted energy. Chang teaches the processor further comprises a search configured to search for the first signal as a function of the combined weighted energy (col.9, line 4-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chang into the system of Forssen and Honcharenko in order to supply traced multipath tracking timing information.

As to claim 62, the limitation of the claim is same limitation of claim 30; therefore, the claim is interpreted and rejected as set forth as in claim 30.

As to claim 63, Chang also teaches the remote station of claim 62 wherein the searcher comprises a correlator configured to despread a pilot signal, the search for the first signal being a function of the pilot signal (col.10, line 1-16).

As to claim 96, the limitation of the claim is same limitation of claim 30; therefore, the claim is interpreted and rejected as set forth as in claim 30.

As to claim 97, the limitation of the claim is same limitation of claim 63; therefore, the claim is interpreted and rejected as set forth as in claim 63.

Allowable Subject Matter

Claims 14-17, 31-34, 48-51, 64-68, 82-85, 98-102 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 14, 31, 48, 64, 82, 98-102, the teaching of above prior arts either alone or in combine fails to teach the method of claim 12 wherein the formation of the second beam comprises receiving the energy through a second plurality of spatially separated elements, applying a second weight to the received energy from each of the second plurality of elements, and combining the second weighted energy, the second weight being a function of the weight applied to form the first beam.

Dependent claims 15-17, 32-34, 49-51, 65-68, 83-85 are allowable for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Nakagawa (US 6,466,166) teaches the multi-beam receiving apparatus.

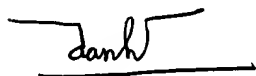
B. Kohno et al (US 6,522,898) teaches the radio communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C LE whose telephone number is 703-306-0542.

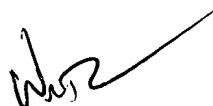
The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Danh C.Le



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600